



AMENDMENTS TO THE SPECIFICATION

Please amend the abstract as follows:

ABSTRACT OF THE DISCLOSURE

An ion-assisted deposition technique to provide planarization of topological defects, e.g., to mitigate the effects of small particle contaminants on reticles for extreme ultraviolet (EUV) lithography. Reticles for EUV lithography will be fabricated by depositing high EUV reflectance Mo/Si multilayer films on superpolished substrates and topological substrate defects can nucleate unacceptable ("critical") defects in the reflective Mo/Si coatings. A secondary ion source is used to etch the Si layers in between etch steps each step to produce topological defects with heights that are harmless to the lithographic process.

Please amend paragraph 8 as follows:

The invention is an ion-assisted deposition technique for the planarization of topological defects. One application of this planarization technique is to mitigate the effects of small particle contaminants on reticles for extreme ultraviolet (EUV) lithography. Reticles for EUV lithography will be fabricated by depositing high EUV reflectance Mo/Si multilayer films on superpolished low-thermal-expansion glass substrates. Any topological substrate

defects can nucleate unacceptable (“critical”) defects in the reflective Mo/Si coatings. A Mo/Si planarization process has been developed in which a secondary ion source is used to etch the Si layers in between each deposition of a Mo/Si bilayer; substrate surfaces with 50 nm diameter particulates are planarized to produce topological defects with heights of ~1 nm, rendering them harmless to the lithographic process. This can be achieved while maintaining a low RMS roughness of the coating surface and also a high EUV reflectivity for the Mo/Si; the latter enables the planarization layer to also be used as the reflective coating. Be/Si films may be substituted for Mo/Si. In one embodiment, a fraction of the amorphous material between the values of 0.05 and 1 is removed.